

# White-backed Night Heron *Gorsachius leuconotus* at Nazinga Game Ranch, Burkina Faso

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Le Bihoreau à dos blanc *Gorsachius leuconotus* au Ranch de Gibier de Nazinga, Burkina Faso. La présence du Bihoreau à dos blanc *Gorsachius leuconotus* au Burkina Faso a été confirmée au Ranch de Gibier de Nazinga et le long du fleuve Mouhoun. De 1999 à 2002, pas moins de 52 observations totalisant 108 individus, dont au moins sept immatures, ont pu être réalisées sur le seul site de Nazinga, où l'espèce est probablement nicheuse. L'auteur passe en revue les données récoltées sur l'espèce et son habitat. Des groupes de 4, 5, 6, 10 et 12 individus ont été observés en avril-mai, période pendant laquelle le nombre d'observations était aussi le plus élevé. Ceci laisse supposer l'existence de mouvements migratoires vers le nord avant la période de nidification. Selon une estimation provisoire, le nombre de Bihoreaux à dos blanc pourrait atteindre environ 150 couples pour l'ensemble du pays.

Ornithological research, conducted at Nazinga Game Ranch (NGR), Burkina Faso, from April 1999 to August 2002, produced several sur-

prises, of which confirmation of the occurrence of White-backed Night Heron *Gorsachius leuconotus* was one of the highlights.



Figure 1. Location of Nazinga Game Ranch in Burkina Faso and detailed view with rivers, forest galleries (adapted from Dekker 1984) and location of White-backed Night Heron *Gorsachius leuconotus* records.

Localisation du Ranch de Gibier de Nazinga au Burkina Faso. Réseau hydrographique et forêts galeries au sein du ranch (d'après Dekker 1984) et localisation des observations du Bihoreau à dos blanc.

This state-owned game ranch, 130 km south of Ouagadougou on the Ghanaian border (11°10'–11°18'N 01°16'–01°43'W), covers 94,300 ha of savanna, where managed safari hunting of great antelopes and buffaloes is offered together with game viewing and ecotourism activities. With near-contiguous Kaboré Tambi National Park and adjacent hunting zones, it forms Burkina's second-largest Important Bird Area (Lungren *et al.* 2001).

Nazinga lies in the Sudan sector and has an essentially southern Sudanian climate. Rainfall averages 850–1,050 mm p.a., but is strictly concentrated in the rainy season, from June to October, entailing a seven-month dry season. Temperatures are usually high, with a mean 18.1°C in January and 38.4°C in April, and abundant sunshine. The site consists mainly of plains that slope gently toward drainage channels. The south-east-flowing Sissili River, which holds water only from June to mid-October, is the main drainage through the ranch. Vegetation is typical of southern Sudan / northern Guinea savanna, and is dominated by shrub and tree savanna with *Vitellaria paradoxa* and *Combretum glutinosum*, and patches of woodland savanna with *Isoberlinia doka*, *Azelia africana* and *Anogeissus leiocarpus*, whilst riparian forest occurs along the major drainages. Dominant species of these gallery forests, which have a canopy cover of 50–75% and a height of 15–25 m, include *Daniella oliveri*, *Khaya senegalensis*, *Cacia sieberiana*, *Vitex donana*, *Dyospyros mespilliformis*, *Mitragyna inermis*, *Anogeissus leiocarpus*, *Albizia chevalieri* and *Acacia gourmaensis*. The dense shrub layer comprises *Saba senegalensis*, *Paullina pennata*, *Combretum paniculatum*, *Cola laurifolia*, *Sarcocephalus latifolius*, *Mimosa pigra* and *Mogania ferruginea*, under which grows a sparse to rare herbaceous cover with *Andropogon g. gayanus*, *Paspalum orbiculare*, *Vetiveria nigriflora* and *Andropogon macrophyllus*.

Originally, gallery forests were only present along the Sissili River and some major affluents, such as the Dawevele and Nazinga Rivers. However, since 1979, when NGR was created, 11 dams have been constructed on major streams, and these now contain water year-round, resulting in the gradual spread of gallery forests. The permanent availability of water, combined with controlled bushfires and poaching reduction efforts, has led NGR to support one of the largest African

Elephant *Loxodonta africana* populations in the region, comprising more than 600 individuals, as well as a diversity of other mammals. A total of 329 bird species has been recorded (Portier *et al.* 2002).

### First records of White-backed Night Heron

On 13 September 1999, c.30 minutes after sunset, I flushed six medium-sized, stocky night herons from dense vegetation bordering Talanga dyke. Due to the poor light, no plumage details were observed, but the unfamiliar alarm calls led me to believe that these were not Black-crowned Night Herons *Nycticorax nycticorax*. I reported the observation to Georges H. Oueda, who informed me that he and Martin Robinson had flushed two night herons that he presumed to be White-backed Night Herons from *Mitragyna inermis* trees at Barka dam, near the ranch headquarters, in the early morning of 11 November 1997. I thus decided to pay special attention to favourable habitats for the species, which is reputedly shy, secretive, largely nocturnal and easily overlooked (Brown *et al.* 1982, Borrow & Demey 2001), and had not yet been definitely recorded in Burkina Faso (Dowsett 1993).

On 18 February 2000, in daylight, I had good views of two adults roosting in dense riverine vegetation at Barka dam, precisely where Oueda and Robinson saw two birds in 1997. Subsequently, I encountered the species more or less regularly.

### Identification

Seen well, the dark head, blackish-brown upperparts, white throat contrasting with rufous neck and breast, white belly with some inconspicuous black streaks, and large white patch around the huge dark eye, made identification fairly straightforward. The triangular white patch on the back was only seen in particular postures (Fig. 2) or occasionally in flight. White-backed Night Heron appeared stockier in flight than the slightly larger Black-crowned, with slightly shorter wings. The head was held closer to the body and the feet extended well beyond the tail (the latter often hard to see in bad light).

Identification of dull-brown immatures was trickier. Diagnostic were the darker and unstreaked forehead and crown, and the huge bulging eyes. Neck and upper breast were heavily streaked brown, upperparts speckled, wing-coverts





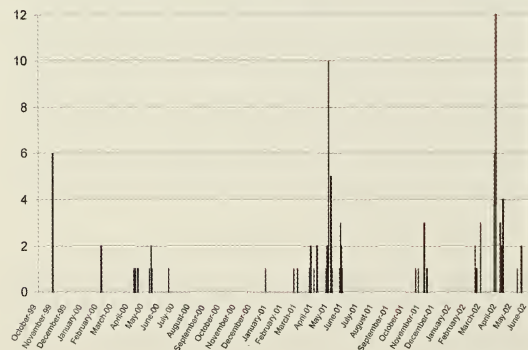
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tipped with conspicuous buffish spots, and throat and belly white (Figs. 3–4).

## Behaviour

During the day, White-backed Night Herons were mainly found roosting in dense shrubbery or the lower canopy of gallery forest, at 2–15 m height. When flushed, they usually flew only a short distance and perched higher in the canopy, at c.20 m, although never at the top or in an exposed position, making them difficult to re-find. They appeared very clumsy on take-off, when flushed from dense shrubs, making much more noise than Black-crowned Night Herons. This might be due to their shyness, prompting them to perch deeper in the vegetation. With experience, this became useful in detecting the species and distinguishing

it from Black-crowned Night Heron. An immature, flushed at night, became entangled in the bush from which it was trying to escape, hanging by one foot for c.1 minute, head down with open wings, before it managed to free itself.

Except when flushed, White-backed Night Herons were seldom active by day. They left their roost well after dark and were generally not encountered on their feeding grounds (dams and riverbanks) less than one hour after sunset. They were apparently active all night and returned to roost in the first light of dawn, 15–30 minutes before sunrise. Black-crowned Night Herons may roost in exposed positions, e.g. on dead trees at dams, and tend to be more active during the day.

## Methods for density estimates

Diurnal walks under the canopy of dense riverine forest was the best way to detect White-backed Night Herons, by flushing them. Nocturnal visits with a strong portable spotlight produced additional records of birds fishing and permitted photographs.

The first year, only sites in the conservation area (13,200 ha in the western part of the ranch, including Akwazena dam, the headquarters and the tourist campground) were visited regularly and birds were seen near the dams of Talanga, Barka and Kozougou.

In order to gain information concerning the species' density along some of Nazinga's major streams, two sections of gallery forest were surveyed: (1) 5.9 km along the Sissili River, from Nagale to Barka, and (2) 10.7 km along the Dawevele River, between Kalieboulou and Kozougou dams (see Fig. 1 for details). The survey, which consisted in walking as close as possible to dense riparian vegetation, in order to flush roosting birds, was undertaken at the start of the rainy season, on 7 and 9 June 2001, as records from the previous year suggested that birds are most easily detected during this period. The precise location of birds was noted using a GPS device. Such methodology can only produce approximate figures, as only one side of the river was surveyed and some birds may not have been flushed, especially on wider sections of river.

Results were extrapolated to the total length of suitable riparian forest within NGR. The vegetation mapping of NGR, obtained from aerial photography and field control surveys (Dekker 1984),

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### Captions to plate on opposite page

Figures 2–3. Adult White-backed Night Heron *Gorsachius leuconotus*, Nazinga Game Ranch / Bihoreau à dos blanc *Gorsachius leuconotus* adulte, Ranch de Gibier de Nazinga (Bruno Portier)

Figures 4–5. Immature White-backed Night Heron *Gorsachius leuconotus*, Nazinga Game Ranch / Bihoreau à dos blanc *Gorsachius leuconotus* immature, Ranch de Gibier de Nazinga (Bruno Portier)

Figure 6. Records of White-backed Night Heron *Gorsachius leuconotus* at Nazinga Game Ranch, 1999–2002.

Observations du Bihoreau à dos blanc *Gorsachius leuconotus* à Nazinga, 1999–2002.



**Table 1.** Estimated suitable habitat for White-backed Night Heron *Gorsachius leuconotus* at Nazinga Game Ranch.

**Tableau 1.** Estimation linéaire des portions d'habitat favorable au Bihoreau à dos blanc *Gorsachius leuconotus* à Nazinga.

River	Section	Length (in km)
Sissili	Nagale–Ghana border	54.0
Nazinga	Oualem–Sissili confluence	26.2
Dawevele	Koumbili–Kalieboulou	14.7
Dawevele	Natiedougou–Talanga	7.9
Dawevele	Kalieboulou–Kozougou	10.7
Dawevele	Kozougou–Sissili confluence	9.1
<b>Total</b>		<b>122.7</b>

permitted the amount of suitable habitat for the species to be fairly accurately estimated at 122.7 km (Table 1). Only major streams likely to have good-quality riverine forest were taken into account. Smaller streams may also have patches of suitable habitat, but as these are more difficult to map and unlikely to hold a large number of herons, they were not included in the estimate.

## Results

From 1999 to 2002, the species was encountered on 52 occasions, totalling 108 individuals. Although most observations were of singles (31 records or 60%) two birds together (11 records, 21%) or three birds (four records, 8%), groups of 4, 5, 6 (twice), 10 and 12 birds were also encountered, mostly in dense vegetation downstream of Barka dam. Unlike as stated in some literature (e.g. Brown *et al.* 1982, Hancock & Kushlan 1984), the species thus shows, at least at some seasons, evident gregariousness. Over three consecutive years, such concentrations were observed at the end of the dry season or very early in the rainy season, in April–May. During this period the number of encounters was also highest, perhaps indicating a pre-breeding northward movement. No southward post-breeding migration was observed, however, possibly because it occurs after the rainy season and the widespread availability of water is not conducive to birds flocking at feeding grounds. The decrease of records in the middle rainy season (July–September) may be attributed

to a combination of less-intensive field work, due to the difficulty of driving muddy tracks, and birds remaining undetected in dense vegetation. The fewer records in October–February might be due to a real southbound migration to avoid the drought. However, assumptions concerning the species' seasonal occurrence in Burkina Faso are still hypothetical and more data are needed. Although very little is known concerning seasonal movements elsewhere, these are suspected in some parts of its range (Hancock & Kushlan 1984, Martínez-Vilalta & Motis 1992).

Although it was not always possible to age birds because of poor light or the brevity of the sighting, seven were positively identified as juveniles or immatures. Nests were searched for, but none was found. Breeding by the species at NGR is therefore unproven, although circumstantial evidence suggests it to be probable.

During the survey on 7 and 9 June 2001, three birds were recorded on both sections, giving an estimated density of  $6 / 16.6 \text{ km} = 0.36 \text{ bird/km}$ , or  $1 / 2.7 \text{ km}$ . Considering the total of 122.7 km of suitable habitat, the potential population at Nazinga is  $c.45$  birds, but the survey was based on too few data to be statistically significant.

## Discussion

On the basis of the findings in Nazinga and records elsewhere in the country, a broad estimate of the species' population in Burkina Faso can be attempted. Indeed, since the discovery of the species at Nazinga, other records have come to light. The species has now also been reported along the Mouhoun River, where the first White-backed Night Heron for Burkina Faso was seen, in August 1997, at Pourra, 25 km south of Boromo (H. Van Renterghem pers. comm.). Further records along the same river include  $c.20$  individuals 30–50 km north of Boromo, in July 2001, one at Boromo, on 22 December 2002, four at the Caeceadra campground, 10 km south of Boromo, in January 2003, and up to 12 in September 2003 and January 2004 (Demey 2004, F. Baillon pers. comm., H. Van Renterghem pers. comm.). Further west, at the 'Mares aux hippos', 50 km north of Bobo-Dioulasso, immatures were observed in December 2003 (one) and May 2004 (two) (F. Baillon pers. comm.).

The Mouhoun, formerly Black Volta, is the largest of the three main branches of the Volta

River that dissect Burkina Faso. Its drainage system covers half of the country with a length of c.600 km. Other large tree-lined rivers include the Comoé, in the south-west, and the Nakambe, Nazinon, Sissili and Pendjari in the Sudano-Guinean sector. Together, these rivers probably possess more than 1,500 km of gallery forests in Burkina Faso. If a moderate preliminary estimate of one pair/10 km is taken, the population of White-backed Night Herons on the Mouhoun River would be 60 pairs, and close to 150 pairs for the entire country.

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